

Appl. No. 09/927,255
Response Dated February 10, 2005
Reply to Office Action of November 10, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) An apparatus, comprising:

a document object generator to receive transaction information of a message and create a document object from said transaction information;

a pattern object generator to receive pattern information of a pattern and create a pattern object from said pattern information; and

a pattern parser to parse the pattern information for one or more elements according to a predefined pattern object data structure and to place said elements in appropriate blocks within said pattern object data structure; and

a content based switching decision logic to compare said document object with said pattern object, and to make a switching decision for a message based upon said comparison.

2. (original) The apparatus of claim 1, further comprising an output interface to receive a message from a network and to receive said switching decision from said content based switching decision logic, said output interface to route or switch the received message to one of a plurality of processing nodes to process said message based upon said switching decision.

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3. (original) The apparatus of claim 2, wherein said processing nodes comprise servers to process said messages.

4. (original) The apparatus of claim 2, wherein said content based switching logic compares said document object with said pattern object using a pattern matching algorithm.

5. (original) The apparatus of claim 4, wherein said pattern object contains at least one expression, and said pattern matching algorithm evaluates said at least one expression for a match with said document object.

6. (original) The apparatus of claim 2, wherein the output interface translates a destination address and port number of the message to the destination address and port number of the one of the processing nodes that will process the message.

7. (original) The apparatus of claim 1, wherein said document object represents a logical tree of said transaction information.

8. (original) The apparatus of claim 7, wherein said logical tree contains links to a child, with said child having links to its siblings.

9. (original) The apparatus of claim 7, wherein said logical tree is represented as a plurality of entries in a document object table.

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10. (original) The apparatus of claim 1, wherein said pattern object comprises at least one sub-expression, with said sub-expression represented by an expression object.

11. (original) The apparatus of claim 10, wherein said expression object comprises an expression type and expression data.

12. (original) The apparatus of claim 1, wherein said transaction information and said pattern information represent XML information.

13. (currently amended) A method comprising:
receiving a message having application data with transaction information;
creating a document object using said transaction information;
receiving a pattern object representing pattern information;
parsing the pattern information for one or more elements according to a predefined pattern object data structure;
placing said elements in appropriate blocks within said pattern object data structure;
comparing said document object with said pattern object; and
directing said message to one of a plurality of processing nodes in accordance with said comparison.

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14. (original) The method of claim 13, wherein said receiving said pattern object comprises: receiving said pattern information; and creating a pattern object using said pattern information.

15. (original) The method of claim 13, wherein said receiving said pattern object comprises retrieving said pattern object from memory.

16. (original) The method of claim 13, wherein said comparing comprises comparing one or more data characters and one or more markup characters describing the data characters in the application data to similar information provided in the pattern information.

17. (original) The method of claim 13, wherein said transaction information comprises business transaction information that is provided in a XML based language.

18. (original) The method of claim 13, wherein said document object represents a logical, tree of said transaction information.

19. (original) The method of claim 13, wherein said logical tree contains links to a child, with said child having links to its siblings.

20. (original) The method of claim 19, wherein said logical tree is represented as a plurality of entries in a document object table.

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21. (original) The method of claim 13, wherein said pattern object comprises at least one sub-expression, with said sub-expression represented by an expression object.

22. (original) The method of claim 21, wherein said expression object comprises an expression type and expression data.

23. (currently amended) A method of XML based switching, comprising:
receiving a XML message, the message including business transaction information provided in a XML based language;

creating a document object using said business transaction information;

comparing said document object to one or more pattern objects representing pattern information; and

directing said XML message to one of a plurality of processing nodes or application servers in accordance with said comparison,

wherein said pattern information is parsed for one or more elements according to a predefined pattern object data structure, and said elements are placed in appropriate blocks within said pattern object data structure.

24. (original) The method of claim 23, wherein said document object represents a logical tree of said transaction information, and said pattern object comprises at least one sub-expression, with said sub-expression represented by an expression object.

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25. (currently amended) An article comprising:

a storage medium;

said storage medium including stored instructions that, when executed by a processor, result in receiving a message having application data with transaction information, creating a document object using said transaction information, receiving a pattern object representing pattern information, parsing the pattern information for one or more elements according to a predefined pattern object data structure, placing said elements in appropriate blocks within said pattern object data structure, comparing said document object with said pattern object, and directing said message to one of a plurality of processing nodes in accordance with said comparison.

26. (original) The article of claim 25, wherein the stored instructions, when executed by a processor, further result in comparing by comparing one or more data characters and one or more markup characters describing the data characters in the application data to similar information provided in the pattern information.

27. (currently amended) An article comprising:

a storage medium;

said storage medium including stored instructions that, when executed by a processor, result in receiving a XML message, the message including business transaction information provided in a XML based language, creating a document object using said business transaction information, comparing said document object to one or

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more pattern objects representing pattern information, parsing the pattern information for one or more elements according to a predefined pattern object data structure, placing said elements in appropriate blocks within said pattern object data structure, and directing said XML message to one of a plurality of processing nodes or application servers in accordance with said comparison.

28. (original) The method of claim 27, wherein said document object represents a logical tree of said transaction information, and said pattern object comprises at least one sub-expression, with said sub-expression represented by an expression object.